What is claimed is:

1. (three times amended)

A process for overmolding tubes comprising the steps of:

inserting a tube of a first polymer, having an inner diameter, at least partially into a mold and at least partially onto a cylindrical mandrel, the mandrel having a base and a tip, an outer diameter of said mandrel dimensioned so as to allow the inner diameter of the tube to slide thereon, said mold containing a void for receiving a second polymer, the void co-acting with the mandrel and the tube to define an overmolding shape;

injection molding the second polymer over the tube and the mandrel in the void of the mold; and

crosslinking the first and second polymers independently to an initial degree, and

independently crosslinking said polymers to a higher final degree.

63. The process of claim 1 wherein

the overmolding shape comprises

a sealing surface region at the base of the mandrel and

a tube contacting region adjacent thereto.

64. The process of claim 1 wherein

the overmolding shape comprises an internally threaded engaging surface region at the base of the mandrel and

a tube contacting region adjacent thereto.

65. The process of claim 1 wherein

the overmolding shape comprises an externally threaded engaging surface region at the base of the mandrel and

a tube contacting region adjacent thereto.

66. (amended)

The process of claim 1 wherein

the first and second polymers are polyethylene.

67.(amended)

The process of claim 66 wherein

an initial degree of crosslinking of each of the first and second polymers is in the range of from about 35% to about 50% and the final degree of crosslinking of each of the first and second polymers is greater than or equal to about 50%.

68. The process of claim 63 wherein

the sealing surface region is selected from the group consisting of a cup-shaped void and a radiused void; and wherein

the tube contacting region is an essentially tubular void.

69. The process of claim 68 wherein

the tube further comprises an annular shelf interposed between the sealing surface region and the tube contacting region.

70. The process of claim 64 wherein

the internally threaded engaging surface region is an internally threaded annular void; and wherein

the tube contacting region is an essentially tubular void.

71. The process of claim 70 wherein

the tube further comprises a n-sided shelf interposed between the internally threaded engaging surface region and

the tube contacting region and wherein n is an integer value greater than or equal to 4.

72. The process of claim 65 wherein

the externally threaded engaging surface region is a threaded annular void; and wherein

the tube contacting region is an essentially tubular void.

73. The process of claim 72 wherein

the tube further comprises a n-sided shelf interposed between the externally threaded engaging surface and

the tube contacting region and wherein n is an integer value greater than or equal to 4.

74. The process of claim 1 wherein

the tube further comprises a mesh overbraid applied prior to the injection molding step.

75. The process of claim 63 which further comprises

the step of inserting a nut onto the tube after the step of injection molding.

76. The process of claim 63 which further comprises the step of

molding a retaining ring onto the first polymer tube by heating a portion of the tube posterior to the nut and

compressing at least one end of the tube along a longitudinal axis of the tube, a mandrel having been inserted into the tube prior to the step of compressing.

77. The process of claim 66 wherein

the first polymer is a high density polyethylene and

the second polymer is a low density polyethylene.

78. The process of claim 66 wherein

the first polymer is a low density polyethylene and

the second polymer is a high density polyethylene.

79. The process of claim 1 wherein

at least one of the first and second polymers is at least partially crosslinked before the step of crosslinking.

80. The process of claim 1 wherein

an initial degree of crosslinking of the first polymer is less than an initial degree of crosslinking of the second polymer.

81. A process for overmolding tubes comprising the steps of:

inserting a tube of a first polymer having a first polymer initial degree of crosslinking, said first polymer having an inner diameter, at least partially into a mold and at least partially onto a cylindrical mandrel, the mandrel having a base and a tip, an outer diameter of said mandrel dimensioned so as to allow the inner diameter of the tube to slide thereon, said mold containing a void for receiving a second

polymer, the void co-acting with the mandrel and the tube to define an overmolding shape;

injection molding a second polymer having a second polymer initial degree of crosslinking, said initial degrees of crosslinking being selected independently for the first and second polymers, over the tube and the mandrel in the void of the mold; and

crosslinking the first and second polymers to a final degree, said final degree of crosslinking for the first and second polymers being selected independently for the first and second polymers.

82. The process of claim 81 wherein

an initial degree of crosslinking of each of the first and second polymers is in the range of from about 35% to about 50% and the final degree of crosslinking of each of the first and second polymers is greater than or equal to about 50%.

83. The process of claim 81 wherein

the first polymer is a high density polyethylene and

the second polymer is a low density polyethylene.

84. The process of claim 81 wherein

the first polymer is a low density polyethylene and

the second polymer is a high density polyethylene.

85. The process of claim 81 wherein

an initial degree of crosslinking of the first polymer is less than an initial degree of crosslinking of the second polymer.

86. The process of claim 81 wherein

the overmolding shape comprises

a sealing surface region at the base of the mandrel and

a tube contacting region adjacent thereto.

87. The process of claim 81 wherein

the overmolding shape comprises an internally threaded engaging surface region at the base of the mandrel and

a tube contacting region adjacent thereto.

88. The process of claim 81 wherein

the overmolding shape comprises an externally threaded engaging surface region at the base of the mandrel and

a tube contacting region adjacent thereto.

89. The process of claim 81 wherein

the first and second polymers are polyethylene.

90. The process of claim 89 wherein

an initial degree of crosslinking of each of the first and second polymers is in the range of from about 35% to about 50% and the final degree of crosslinking of each of the first and second polymers is greater than or equal to about 50%.

91. The process of claim 86 wherein

the sealing surface region is selected from the group consisting of a cup-shaped void and a radiused void; and wherein

the tube contacting region is an essentially tubular void.

92. The process of claim 91 wherein

the tube further comprises an annular shelf interposed between the sealing surface region and the tube contacting region.

93. The process of claim 87 wherein

the internally threaded engaging surface region is an internally threaded annular void; and wherein

the tube contacting region is an essentially tubular void.

94. The process of claim 93 wherein

the tube further comprises a n-sided shelf interposed between the internally threaded engaging surface region and

the tube contacting region and wherein n is an integer value greater than or equal to 4.

95. The process of claim 88 wherein

the externally threaded engaging surface region is a threaded annular void; and wherein

the tube contacting region is an essentially tubular void.

96. The process of claim 95 wherein

the tube further comprises a n-sided shelf interposed between the externally threaded engaging surface and

the tube contacting region and wherein n is an integer value greater than or equal to 4.

97. The process of claim 81 wherein

the tube further comprises a mesh overbraid applied prior to the injection molding step.

98. The process of claim 81 which further comprises

the step of inserting a nut onto the tube after the step of injection molding.

99. The process of claim 81 which further comprises the step of

molding a retaining ring onto the first polymer tube by heating a portion of the tube posterior to the nut and

compressing at least one end of the tube along a longitudinal axis of the tube, a mandrel having been inserted into the tube prior to the step of compressing.

100. The process of claim 81 wherein

at least one of the first and second polymers is at least partially crosslinked before the step of crosslinking.

101. The process of claim 81 wherein

an initial degree of crosslinking of the first polymer is less than an initial degree of crosslinking of the second polymer.